

Remarks/Arguments:

These remarks are directed to the Office Action of October 1, 2010. Paragraph numbers in these remarks refer to the published application U.S. Pub. No. 2007/0027032.

Claims 7, 8, 17-25, 28-30, and 33-39 are pending in the application and were examined. Applicants have canceled claims 7, 25, 28-30, 33, and 38-39 without prejudice to prosecution of their subject matter in other patent applications, amended claims 8, 17, 19, 21, 22, 24, and 34-37, and added new claim 40. Support for the amendments and new claim can be found throughout the specification, for example: paragraphs [0046], [0052], [0053], [0094], [0096], [0117], [0118], and [0122], Tables 2, 2-4, 2-5, and 8, and Figures 1, 2-10, and 2-11. The amendments introduce no new matter.

Claim Rejections Under 35 U.S.C. § 103

Claims 7, 8, 17-25, 28-30, and 33-39 stand rejected under Section 103(a) as unpatentable over WO 00/04778 to Smith ("Smith '778"), WO 01/26465 to Smith ("Smith '465"), or Prithiviraj (A host specific bacteria-to-plant signal molecule (Nod factor) enhances germination and early growth of diverse crops, *Planta*, 2003, vol. 216, pp. 437-445). Applicants respectfully submit that the claims are patentable over the cited references for at least the reasons set forth below.

Independent claims 8, 21, and 40 recite the steps of "applying to the plant a first dose of a lipochitooligosaccharide (LCO) at a concentration of from about 1 ng to about 1000 ng per plant; and applying to the plant a second dose of an LCO at a concentration of from about 1 ng to about 1000 ng per plant." None of the cited references, namely, Smith '778, Smith '465, or Prithiviraj, discloses the claimed method steps. Therefore, even in combination, the references fail to disclose all the elements of claims 8, 21, and 40.

Furthermore, the data show that the methods recited in claims 8, 21, and 40 have unexpected properties not present in the cited art. M.P.E.P. § 2145. Applicants have discovered that applying two separate doses of an LCO results in increased fruit number or fruit weight in non-legumes, and increased biomass or yield in legumes. For example, as described in paragraph [0052], twenty tomato plants were treated with "50 ng and 75 ng LCO per plant, applied once (2 weeks after transplanting) and twice (4 weeks after transplanting)." As a result, "[o]n fruit number the 50 ng LCO treatment applied twice showed significantly higher numbers over control for the first 4 weeks" (see paragraph [0053]). As shown in Table 2, when

two doses of LCO were applied within about two weeks of each other (i.e., "First Application: Feb. 21, Second Application: Mar 7, 2003"), there were significant increases in fruit number per plant compared to plants that were treated with only a single dose of LCO. The most significant increase in fruit number occurred when 50 ng LCO were applied twice, compared to 50 ng LCO applied once. For example, two weeks after the application of a second dose of 50 ng LCO (on March 21st), there was an average fruit number of 1.8 fruits per plant for plants treated twice with 50 ng LCO, compared to 0.25 fruit per plant for plants treated only once with 50 ng LCO. In fact, four weeks after the application of the second dose of 50 ng LCO (on April 4th), the plants that had been treated only once with LCO had an average fruit number of only 1.3, which was still lower than the average fruit number for plants treated twice with 50 ng LCO after only two weeks.

Applicants have demonstrated a surprising increase in the resulting fruit number or fruit weight when non-leguminous plants are treated with two separate doses of LCO instead of a single dose, and have also demonstrated a surprising increase in the resulting biomass or yield when leguminous plants are treated with two separate doses of LCO instead of a single dose (see paragraph [0122] and Table 8). The cited references, Smith '778, Smith '465, and Prithiviraj, fail to disclose or suggest applying more than one dose of about 1 ng to about 1000 ng LCO, as recited in claims 8, 21, and 40, and certainly fail to suggest that a second dose is applied between about two weeks to about six weeks after the first dose, as recited in claim 40.

For at least the reasons discussed above, claims 8, 21, and 40 are patentable over the references, either alone or in combination. Claims 17-20, 22-24, and 34-37, which depend from claims 8 and 21, are also patentable over the references, either alone or in combination. Therefore, Applicants respectfully request that the Section 103(a) rejection of these claims be withdrawn.

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Conclusion

Applicants respectfully request reconsideration of the rejections in view of the amendments and remarks submitted herewith. Applicants submit that the pending claims are in condition for allowance, which action is respectfully requested.

Respectfully submitted,



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